

The Commercial

VEGETABLE GROWER

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Vol. 1—No. 4

The Commercial Vegetable Growers National Service Magazine

April, 1953



CALUMET — an attractive, high-yielding Asgrow hybrid. Growers, from New England to the Rio Grande, have often said

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THE

Vegetable

SITUATION

April 1, 1953

OUTLOOK FOR INSECTICIDES in the 1953 seasons indicates plentiful supplies of DDT, toxaphene, aldrin, dieldrin, chlordane, BHC and lindane. Stocks of rotenone, nicotine and pyrethrum should be adequate. Sulphur is low but should meet normal needs.

PROSPECTIVE COMMERCIAL ACREAGE OF FRESH-MARKET VEGETABLES for spring harvest is 7 percent larger than last year. This estimate is based on March 1st report of crops which usually accounts for three-fifths of the vegetable acreage for spring harvest. Relatively large percentage of increases in acreage indicated for broccoli, cabbage, onions and tomatoes. Moderate increases for asparagus, lettuce and spinach. Comparatively large reductions in acreage in prospect for carrots, cauliflower and shallots, with smaller percentage decline in acreages of beets and watermelons.

INTENTION TO PLANT FOR SUMMER HARVEST indicates a 16 percent larger acreage than last year in cabbage, onions and watermelons. These three crops account for about two-fifths of the summer vegetable acreage. Most of this increase results from a 20 percent prospective expansion in acreage of early summer watermelons. Cabbage indicated a 2 percent increase over last year in summer acreage.

PRODUCTION OF COMMERCIAL VEGETABLES DURING 1953 WINTER SEASON is indicated to be 6 percent more than 1952 and 10 percent above short-time acreage. An over-all reduction from February 1, prospect of about 1 percent, as several crops in South Florida failed to recover from the effects of adverse weather conditions which prevailed early in the season. Crops which ranked in the order of decline in tonnage from last month are: tomatoes, green peppers, eggplants, cucumbers and green lima beans.

BELOW NORMAL TEMPERATURE IN CALIFORNIA'S vegetable production sections in last half of February, caused damage in many districts. Tender crops in South end of Imperial Valley suffered most, while crops planted in warm ground in north end of valley escaped with only minor damage. Slight injury to cantaloupes and melons, although reports indicated a few fields badly damaged. Tomatoes and squash suffered varying degrees of damage, depending on location. Lettuce was discolored and peas scarred. Coachella Valley damage reported on tender crops such as snap beans, sweet corn, and tomatoes, but plant loss was slight over the area as a whole. South Coastal Area damage reported confined to strawberries and a few peas in cold locations. In San Joaquin Valley and Central Coast section, strawberry blooms were damaged, but since the bloom was early there is still time for this crop to return to normal schedule.

PROCESSING OF SPINACH reported from California and Texas indicated a 1953 production of 52,200 tons for canning and freezing from winter crop in Texas and early spring crop in California. This is about 10 percent less than the 1952 production of 58,200 tons. The 1953 acreage for the two states is estimated at 11,700 acres, compared with 13,000 acres harvested in winter and spring of 1952. The indicated yield for these two States is 4.46 tons per acre, compared with 4.48 tons obtained last year.

GREEN PEAS FOR PROCESSING PROSPECTIVE PLANTINGS is about 4 percent over 1952. If these early-season acreage prospects materialize, the planting processing will total 462,830 acres. This compares with 444,230 acres planted in 1952. Assuming a loss in plantings of around 7 percent in line with recent years a planted acreage of 462,830 acres of processing peas would result in about 430,000 acres for harvest.

CANNED VEGETABLES: Consumer demand for canned vegetables is expected to continue strong through 1953. Military requirements for canned vegetables are not expected to exceed those of 1952 and may be less.

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Super-Marketing Fresh Vegetables

(An Editorial)

By DR. M. P. RASMUSSEN, Consulting Editor,
Professor of Marketing, College of Agriculture,
Cornell University



IT IS doubtful whether any development during the past 20 years has so profoundly influenced the merchandising of fresh vegetables (and, of course, of all other foods) as has the rapid expansion of the self-service food supermarket. With the uncertainties of possible recessions, wars and whatnot on the business horizon, it would indeed take a gifted seer with a 1960 model crystal ball to forecast accurately future developments in the food supermarket field. However, so long as most housewives like to shop **personally** (and there can be little doubt but that they do); so long as we have automobiles (and we'll probably have more rather than less of them); and so long as Mrs. Consumer believes that prices in supermarkets are cheaper than elsewhere—it seems a good bet that the cash and carry, self-service supermarket will play a constantly expanding role in food merchandising in the United States.

But What About Salesmanship of Vegetables?

The writer has been privileged to know the operators of a large number of food supermarkets. Almost universally, on the one hand they are striving desperately to cut down on costly labor while, on the other hand, they recognize with crystal clarity that the fewer clerks it takes to run a store, the less personal salesmanship there is likely to be in such a store. Consequently unless something is done to offset this lack of personal salesmanship, the difficulties of doing a good job of selling are greatly increased. This may not be such a tough deal for most groceries, dairy products or meats, many of which have been sold under local or national brands and widely advertised for decades. In the case of fresh vegetables, however, it is a horse of another color and lack of store salesmanship and knowhow falls with crushing force on this line of food. Even the most optimistic produce man will admit that out of about 125 or more separate vegetables and fruits which are currently found in any large terminal market, only a beggar's dozen gets anything that even smacks of the kind of promotion that even so common a commodity as a detergent is accorded. To make matters even worse, however, practically every supermarket manager is faced with the very real difficulty of obtaining and **keeping** trained help which knows lettuce from escarole and which can and **will** maintain the fresh vegetable and fruit display in such an attractive manner as to induce Mrs. Consumer **TO SELL HERSELF**. For it must be recognized that self-service means **SELF-SELLING**—and this writer cannot by any possible means overemphasize this statement. It must be recognized, also, that these supermarket clerks are almost 100 per cent citybred boys and girls, who know little or nothing about the wide line of fresh vegetables they are handling.

What's The Answer ???

As in most merchandising problems, the solutions are far from simple. Unfortunately, vegetable and fruit growers, as well as a very substantial share of the produce trade as a whole, simply do not realize how **little** both store managers and produce clerks know about the large number of different kinds and varieties of fresh vegetables and how they must be handled to induce maximum purchases on the part of Mrs. Consumer. If they would take time out to talk with produce clerks in these stores, every member of the produce trade—from grower to wholesaler, jobber or broker—would quickly find out how little they really do know—and also how many things they know that are not true. They will certainly get a very concrete idea as to why vegetable sales are lower than they should be. By the same token, however, this writer can think of nothing more likely

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Furrow irrigation of potatoes on experimental plots; sprinkler irrigation can be seen in the background.

Irrigation More Effective With Closer Spaced Furrows

By **STERLING A. TAYLOR**, Soil Physicist

Utah State Agricultural College, Expt. Sta., Logan, Utah

FURROWS for irrigation should be somewhat less than twice the depth of rooting of the plant, hence furrows should be closer in shallow rooted than in deep rooted crops. With closer spaced furrows the

DR. TAYLOR is associate professor of soils. The research reported here is work under two projects, one of which is a western regional project supported from funds under the Regional Research and Marketing Act of 1946. The Krilium used in this research was supplied by the Monsanto Chemical Company of St. Louis, Missouri, and the PR-78 and the activated sawdust by the Atlantic Oil Refining Company of Philadelphia.

water will move laterally and wet the soil in the middle of the row while it is moving vertically to the moist soil below. This recommendation is made as a result of studies at

the Utah Agricultural Experiment Station to find the fundamental factors affecting the movement of water into and through soils. These studies also show that the use of soil additives such as Krilium and detergents seems to offer some possibilities for increasing water entry into slowly penetrable soils such as those with high amounts of salts or alkali.

The entry and distribution of water in soil are important factors in irrigation and water conservation. It is difficult to get the water to "soak" into some soils. As a result plants show wilting and other symptoms of soil moisture deficiency within a few days after an irrigation.

Deep penetration of water which leaches plant nutrients beyond the root zone is likewise a serious problem but is frequently not recognized as quickly. Since plants are

slow to show nutrient deficiencies this process of leaching may take place for a number of years before it can be recognized; even then the decline in fertility is so gradual that it may be overlooked.

The aim of the studies being made is to improve the rate of movement of water into soils that are difficult to wet and to suggest practices that will provide for adequate irrigation without excessive leaching losses on soils that are easily leached.

Lateral Movement Studied

Potatoes spaced 36 inches between rows were grown on Millville loam at North Logan. When the irrigation furrow was placed centrally between two rows it was found that often the water during an irrigation period had moved laterally from the furrow only about 9 inches. A much

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longer time was needed to get further lateral movement. After 11½ hours of water application followed by overnight drainage the water had wetted to the row only at a depth of 18 inches. The soil in the row at depths of 6 and 12 inches was still dry.

Moisture distribution in the soil after 11½ hours of water application and overnight drainage following the water applications is shown in fig. 1.

Studies in the laboratory have suggested an explanation for this. It has been found that the rate at which water will move in the soil is generally much slower if the soil is dry than if it is moist or wet. In connection with this it was observed that water moved downward in undisturbed cores as a front of moisture in the soil. In dry soils this front was abrupt and it appeared as though water was moving downward from the surface behind the wetting front under the influence of gravity. Water behind the wetting front was moving quite rapidly since the moisture conductivity was high. When the moisture reached the dry soil at the wetting front the conductivity decreased abruptly giving the appearance of water piling up behind the front until the soil was about 80 percent saturated, then it would move rather suddenly to the next lower depth. This jerky movement appeared to be something like that observed when water is piled up above the top of a container such as a cup or tumbler. The water does not flow over the edge until the surface tension of the water is broken by touching the water at the top of the glass; as soon as it is touched all of the stacked up water suddenly flows over the side.

When moist cores were used to study the downward movement of water the wetting front was more gradual than with dry soils. The relationship between moisture in the soil at various depths for both wet and dry cores taken 5½ hours after water was first applied is shown in fig. 2. It can be seen from these curves that the wetting front is not only sharper on the dry core but that the depth to which the soil is wetted in a given time is less in the dry soil.

Studies have not been made of lateral movement of moisture in the laboratory but field studies suggest that the wetting front for lateral movement is not so sharp as for either the moist or the dry cores for downward movement.

The distribution of soil moisture with depth just before irrigation was studied. The increase of moisture with depth suggests that the conductivity of water will increase as the wetting front gets deeper and deeper in the soil. This

increase in conductivity means that the resistance to moisture flow becomes less while the resistance to horizontal flow remains constant. It is logical to suppose that water—like electricity—will follow the lines of least resistance; hence the quantity of water flowing downward continues to increase while that flowing horizontally decreases. The rate of horizontal movement then becomes very slow and it is difficult to wet the soil to the center of the row.

Close Spaced Furrows

If the above suggestion is the correct explanation then it should be possible to correct this difficulty by spacing the furrows such that the distance between furrows is somewhat less than twice the depth to which the soil has been dried out. The soil will dry slowly in regions where plant roots are not located; therefore, the spacing should be less than twice the depth of rooting of the crop at the time of irrigation. The maximum depth of rooting of potatoes is about 12 inches on this soil; therefore, the maximum spacing of furrows should be less than 24 inches. When two furrows were used in each 36-inch potato row with a spacing of 18 inches between furrows it was found that the water



Dr. Taylor watching graduate assistant James Bigger measuring the infiltration rate on slowly permeable soils.

would move laterally to the center of the row while it was moving vertically to the moist soil below and the problem of preventing deep penetration was greatly simplified.

Increasing Infiltration Rates In Tight Soils

The entry of water has been studied on a saline-alkali soil. Four treatments were used. Eight plots were chosen at random and were treated with Krilium at the rate of 1,000 pounds per acre by mixing it into the surface three or four inches of soil. A similar number of plots, also chosen at random, were treated

(Continued on Page 6)

"JEEP" ENGINE DRIVEN IRRIGATION PUMP

for ALL CROPS!




Gorman-Rupp pumps assure adequate water for this orchard.

Sufficient water supply for irrigation, as pictured below, results in a larger and better quality crop of potatoes.

GORMAN-RUPP'S "JEEP" Engine Driven IRRIGATION PUMP assures water for larger and better quality FRUIT and VEGETABLES — more verdant PASTURE LANDS, and crops of all kinds.

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Ask for Irrigation Bulletin No. 2-IR-11-JX

GORMAN-RUPP ORIGINATES — OTHERS IMITATE

THE GORMAN-RUPP COMPANY

MANSFIELD, OHIO

(Continued from Page 5)
with a detergent known as PR-78 (ultra wet) at the rate of 40 pounds per acre. A third group of eight plots was treated with PR-78, 40 pounds per acre combined with a straw mulch 5 tons per acre. A group of four plots was treated with PR-78 mixed with activated sawdust at the rate of 5 tons per acre. A control group of eight plots was given no treatments. During the fourth week after water application, infiltration rates were measured from a single ring infiltrometer 12 inches in diameter inserted in the soil to a depth of 6 inches. A constant head of three inches of water was maintained. The average in-

Table 1. The rate of infiltration of water into a saline-alkali soil treated with various soil conditioners.

Treatment	Infiltration rates cm.hr.
Krilium 1,000 lbs/acre	.843
PR-78 40 lbs/acre	.518
PR-78 / straw	.590
PR-78 / activated sawdust	.542
No treatment	.481

filtration rates on these plots are shown in table 1.

Although these infiltration rates are low it appears that it may be possible to increase the flow of water into the soil by some such treatments.

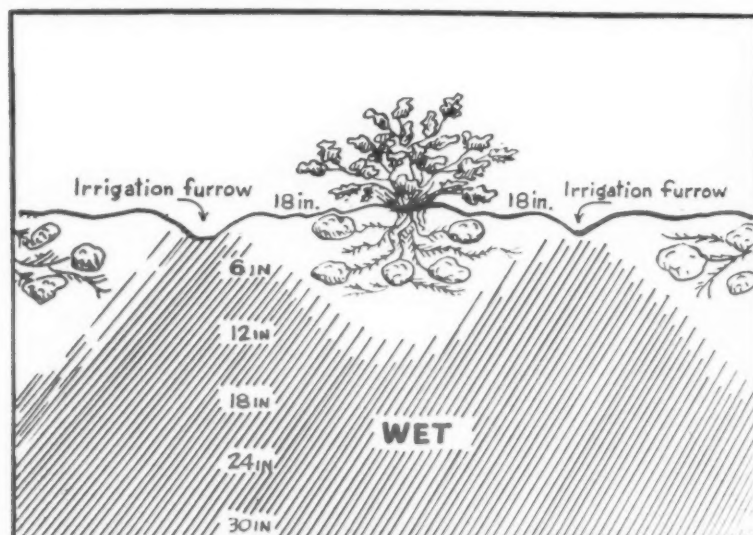
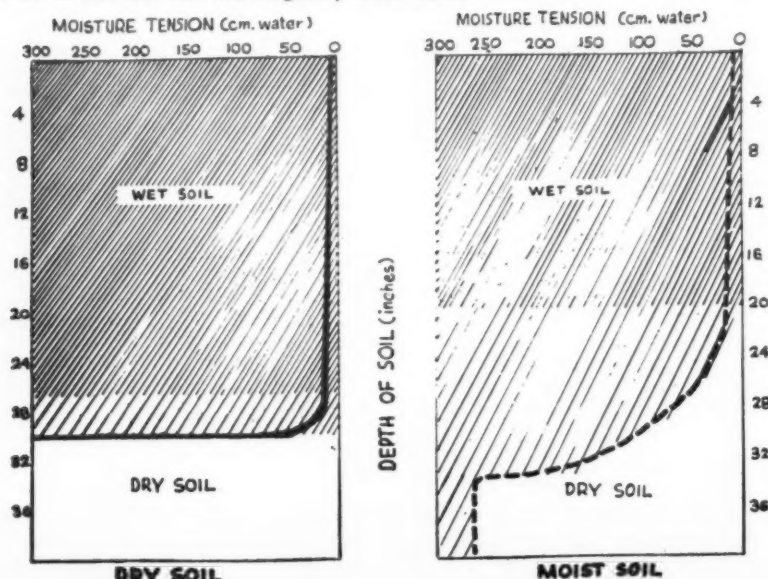


Fig. 1. Above chart, moisture distribution under furrow irrigated potatoes after overnight drainage following an application of water lasting 11½ hours. Note that with furrows spread at 36 inches, the soil around the roots is still dry. 2. Lower chart, moisture distribution in the soil at the end of a 5½ hour uniform application of water. Note the abrupt front in the originally dry soil and the more gradual front in the soil that was originally more moist.



(Continued from Page 3)
to be productive to all members of the produce trade. Such getting down to the grassroots of the fresh vegetable business would undoubtedly result in dozens of ideas as to how growers, shippers, wholesalers, jobbers, brokers and even large scale retailers can help break down this dense wall of ignorance and greatly stimulate sales of fresh vegetables to that degree which is not only good for the produce business but which our best nutritionists tell us is also good for the health of the Nation. One trite statement can be made for sure—if the members of the produce trade do not push their own products intelligently, they may be sure that no one else will.

Can More Packaging Help ??



One of the writer's good supermarket operator friends has aptly characterized the current times as the "grab-it-and-run era" insofar as food sales are concerned. What he means, of course, is the rather evident desire on the part of many housewives to have fresh vegetables (as well as many other perishable foods) put up in convenient, family-sized units which they don't have to weigh or count and which they can grab easily as they go by in their tour of stores which are constantly increasing in size. What sizes of sales units and what types of packages should be used are still highly controversial questions. It seems clear, however, that every member of the produce trade from grower to retailer should be experimenting with each and every one of the fresh vegetables now so readily available to Mrs. Consumer. Only the surface has been scratched in this direction but just enough research has been done here and there to indicate that this is a vast and unexplored field and that there may be "gold in them thar hills" for those experimenters. The grower, shipper, wholesaler, jobber or retailer who hits on the right size of family sales unit and the right type of package Mrs. Consumer will really go for, will indeed have hit the jack pot!

Mosaic on Tomatoes

A REVIEW OF THE TOBACCO OR TOMATO VIRUS DISEASE

(This article prepared especially for "THE COMMERCIAL VEGETABLE GROWER")

The most common and widespread mosaic on tomatoes under both field and greenhouse conditions is the well-known tobacco or tomato virus disease. It is characterized by greenish-yellow mottling of foliage accompanied by a moderate distortion of leaf shape. Under certain conditions tomato plants, especially in the greenhouse, will exhibit a mild greenish-yellow mottling which seems to be caused by physiologic disturbances and seemingly not related to mosaic. In these cases the mottling disappears or at least the new growth is usually not affected.

The degree of true mosaic mottling on the foliage depends on the age of the leaf, the temperature and the amount of sunshine. If infection occurs when the plants are small, there is a distinct reduction in size of the leaflets, dwarfing of the whole plant and a reduction in yield up to 50%. If a strain of potato mottle virus is present, a disease known as double virus streak is induced which produces typical bands of dead tissue on the stem and leaves and also leaf spots. Under conditions of low light intensity, fruit formed from plants infected with tobacco mosaic may be dwarfed or malformed.

Altho it is frequently difficult to trace the source of infection, certain practices are considered to be valuable in its prevention. It has been found that tomato seed harvested in August and September still carried an appreciable amount of tobacco mosaic virus toward the end of the following February. Researchers have found that treatment of this seed with 10% trisodium phosphate for 10 to 15 minutes gave almost complete control of the virus and had no harmful effects on germination. Soils containing decaying plant materials infected with virus are known to carry the living virus for at least three months. Workers who use tobacco undoubtedly spread the virus on many plants which they handle. It has been found that approximately 2/3 of all cigars and pipe tobaccos and 4/5 of the cigarettes tested carry the virus. Authenticated reports, however, indicate in some instances that workers have not been responsible for the virus on the plants they handle. Manufactured chewing tobacco and snuff carry very little or none of the virus. Careful washing of the hands with soap and hot

water after handling tobaccos will go a long way toward inactivating the virus. Cultivators, sprayers and other farm machinery should not come in contact with plants as mechanical transmission is one of the principal means of dissemination. Altho some species of aphids do not transmit the virus, others do and thus it becomes necessary to control all aphids. Weed and flower hosts, especially those in the nightshade family as tomato is, must also be carefully watched. The most common plants likely to supply the virus inoculum include ground cherries, horse nettle, Jerusalem cherry, Jimson weed, nightshades, petunia, plantain, garden huckleberry and related Solanum sp. and tobacco.

Tomatoes are affected with cucumber mosaic but the percentage of infection is usually very low. Stunting is severe altho the leaves do not have the severe mottling seen in tobacco mosaic but are extremely distorted and malformed. The foliage is bizarre in appearance and has given rise to the term "shoestring" foliage which best describes the abnormally compact and bushy plant with elongated leaves and leaflets. Catnip, ground cherry, horse nettle, milkweed, mints, motherwort, petunia and pokeweed are the most important carriers of cucumber mosaic.

In certain greenhouses, plants infected with tobacco mosaic have also become infected with cucumber mosaic. Plants so infected remain short and compact and the leaves have an unusual upright, bushy habit of growth. The young leaves are curled and distorted and a small percentage may show the typical "shoestring" foliage described above. Many of the leaves show a greenish purple discoloration and some of the leaves exhibit large yellow spots of a bleached appearance. The plants produce some fruit which is deeply ridged and when small, show a characteristic protuberance.

The combination of tobacco etch virus with cucumber and tobacco mosaic has been reported in a few greenhouses. Plants show the combined effects of the latter two viruses as indicated above but also exhibit brown dead spots on the leaves. When the spots first appear they are reddish brown with irreg-

ular outlines and are usually numerous near the margins of the leaflets. Leaf spots caused by this combination of viruses are much more numerous than those caused by other viruses. The sources of tobacco etch virus have not yet been ascertained.

In England, tomato aspermy virus has been reported and growers in this country should be on the lookout for this disease. This disease seems to affect the growing point of the main stem and often completely checks the growth. Axillary shoots develop and the plant becomes very bushy. Many of these axillary shoots become aborted at the growing point and further branching takes place. Chrysanthemums in one verified case served as a source of infection and the virus is known to be insect transmitted.

Spotted wilt is serious in some areas and virtually absent in others. In spite of the common name, there is no true wilting of the plant. When viewed from a distance the leaves may have a peculiar bronzed appearance but the development of this characteristic depends upon the environment. The leaflets become covered with yellowish to orange spots which later turn brown and finally die. As the leaflets die, the petioles turn downward strongly. On the green fruit, yellowish spots somewhat resembling sunscald appear. Frequently these spots develop concentric zones of yellow or bronze with green and later with red. Many higher plants are also affected and the disease is spread to tomatoes by thrips altho mechanical inoculations of plants is easily accomplished by the use of expressed sap. Dahlias, Jerusalem cherry, Chrysanthemums, chickweed, calla lily, and Chinese lantern are considered among other plants, to be most dangerous to tomato plant growing.

Aster yellows is rather rare on tomatoes. The plants become a dense bushy mass and the stems usually have a purplish discoloration. It is transmitted primarily by leafhoppers and not by mechanical inoculation of plants.

The production of virus-free tomato plants can be best accomplished by operators who produce only tomatoes and a few other vegetables. Careful control of perennial weeds and the elimination of ornamentals in the plant growing area together with control of insects are important. Seed should be treated and the soil should be sterilized, or at least allowed to compost, for at least six months and preferably two or more years under weed-free conditions. Workers who use tobacco should wash their hands with soap and warm water or with trisodium phosphate before they handle plants.

Technical Briefs

Bacterial Wilt or Stewart's Disease of Sweet Corn

Resistance to bacterial wilt of sweet corn was first achieved when Glenn Smith of the U.S.D.A. introduced Golden Cross Bantam in the early thirties. The disease is most prevalent during growing seasons following mild winters. When the sum of the mean temperatures of December, January and February is over 100, then there is a strong probability of a severe infestation of Stewart's bacterial wilt. When the sum of the mean temperature is between 90 and 100 then a light to severe epidemic may be expected. When the sum is under 90, then only a light infestation can be anticipated. Most of the white hybrids possess an acceptable degree of tolerance but yellow hybrids vary widely in resistance. Generally speaking the earlier varieties tend to be more susceptible than the

latter types altho there are notable exceptions. Hybrid vigor seems to be closely correlated with resistance and it is claimed that resistance will vary with seed lots of the same hybrid. Seedsmen frequently mention the resistance of the hybrids in the description and growers are urged to study the catalogue carefully before making selections.

Varieties which have been developed by state agricultural experiment stations or the United States Department of Agriculture and which are available from most seed companies include: Golden Cross Bantam, Iona, Marcross, N. J. No. 106 (Marcross season), N. J. No. 101 (Carmelcross season), Wisconsin Golden 900 and 950, Iochief, Hoosier Gold, Iogold 51, Golden Harvest, Lee, Lincoln, and other Connecticut hybrids. Carmelcross has a fair degree of resistance but was observed to be

somewhat susceptible in Indiana in 1952. Most of the larger seed companies also have developed hybrids having the desired resistance.

Chemical Weed Control In Green Beans

John Cavallero of the Northwest Packing Company, Portland, reported that the L and H farms tried a dinitro selective weed killer on their pole beans this past year. The chemical was mixed with water and sprayed as bands down the row just before the bean seedlings broke the soil surface. Weed control in the row was good and there was no apparent injury to the beans.

At Oregon State College, research plots of bush beans were sprayed with two types of dinitro selective as pre-emergence treatments in the spring of 1952. Weed counts made 43 days after spraying indicated that the dinitro selectives gave about 70 to 75 per cent weed control as compared to check plots. There was no apparent damage to the beans and yield data indicated an increase of 25 to 40 per cent production over cultivated check plots.

These experimental and field results look very promising but are only from one year's observation. It would be well to go a little slow on treating large acreages until we find out what happens under different conditions.

Onion Maggot Control Notes

The onion maggot is probably the most important insect pest of produce onions. The greatest loss arises from the destruction of the seedling plants by the first generation maggots in the spring. Failure to apply control measures will result in a virtually complete failure of the crop in most seasons. Later generations of the insect may attack the maturing bulbs and render them unmarketable.

Furrow treatments with chemicals at seeding time have proved to be quite successful for controlling this pest. Calomel was first found to be effective and is still used by a few growers. DDT looked promising for awhile, but was superseded by chlordane. The latest Expt. Station recommendation calls for the use of wettable powder dilutions at the rate of 2 pounds of actual chlordane per acre.

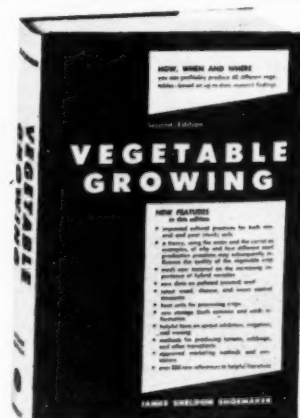
How To Grow 40 Different Vegetables

Vegetable Growing

New 2nd Edition
By James Sheldon Shoemaker
Ontario Agricultural College

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This book is chock full of the kind of tested information every grower should have within easy reach as particular problems arise. Dr. Shoemaker treats the individual vegetables, giving detailed information about each one.

These pages contain facts that are really needed for successful production—for example, there's an excellent table covering the 40 seeds—providing yield of seeds per acre, longevity, minimum required germination, seeds per ounce, and weights of seeds per quart. And there are useful facts about containers and bunching methods, about time and depth of planting, about harvesting and marketing.

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Equipment and materials

Naugatuck Chemical Division, U. S. Rubber Co., Introduces A New Pre-Emergence Weed Killer

Since the advent of 2,4-D, chemical weed killers have been receiving serious attention by commercial growers as a means of reducing the costly and tedious work of hand weeding and cutting down the amount of crop cultivation.

The result has been an intensification of research and development in organic chemicals for this use and several new chemicals have been placed on the market. Most of these new weed killers introduced to date, however, have killed the weeds by contact while they were healthy, growing plants.

Naugatuck Chemical Division, United States Rubber Company, has developed a new weed killer, known chemically as N-1 naphthyl phthalamic acid, which will kill weeds as they begin to sprout and before they emerge from the ground.

This unique property, coupled with the fact that the chemical can be used safely on many truck garden crops, makes the chemical a

tremendous boon for the vegetable grower, who has not been able to use 2,4-D because it was highly injurious to his crops.

Alanap is not yet ready for commercial sale. It is being tested extensively this season by agricultural experiment stations and will probably be on the market next year on a limited sale basis primarily for use on vine crops.

Test results to date for the chemical have been extremely promising. This has been true for such crops as cucumbers, cantaloupes, watermelons, pumpkins, squash, asparagus, snap beans, soybeans, peanuts, sweet potatoes, peppers, carrots and onions.

Dr. G. F. Warren, associate professor of horticulture at Purdue University Experiment Station, has found Alanap to be particularly effective on vine crops. Muskmelons, cucumbers, and watermelons have shown good tolerance to both pre and post-emergence applications of the chemical. In field experiments,

he obtained excellent control of germinating crabgrass with an application of Alanap at the rate of 4 pounds to the acre and there was no adverse effect on the yield or maturity of the muskmelons.

Associated Seed Growers at Milford, Conn., eliminated hand weeding completely and saved approximately \$150 per acre on a four-acre test plot planted with varieties of squash, cucumbers and pumpkins used for breeding and seed purposes. Alanap was applied at varying rates ranging from 4 to 8 pounds per acre.

Dr. D. D. Hemphill, associate professor of horticulture at the University of Missouri experiment station, has tested Alanap on cantaloupes, cucumbers, watermelons, squash, asparagus, lima beans, potatoes, and snap beans as a pre-emergence treatment at the rate of 4 lbs. per acre with satisfactory weed control and no adverse effect on the crops. Crabgrass, foxtails and pigweed are typical weed problems in Missouri.

Tests at Naugatuck Chemical's Pethany Laboratory have been made on cotton, soybeans, flax, pumpkins, squash, corn, beans, and carrots with little or no damage to the crops and excellent weed control.

(Continued on Page 13)

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- 40' boom adjusts up to 8 feet
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- 200 gallon tank
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GROWER

APRIL, 1953

Page 9

Water Supply Outlook For Mountain States

SNOW MELT, STREAM FLOW STILL PREDICTED BELOW AVERAGE

THE water supply outlook for streams originating in the mountains of the Southern Rocky Mountain area is below normal for this date. There has been some improvement in the water supply outlook in Northern Colorado and Southern Wyoming during February and a slight decline in Southern Colorado and Northern New Mexico.

Snow accumulation to date is from 80 to 110 percent of normal in Northern Colorado and Southern Wyoming, decreasing to 60 to 80 percent of normal on the Rio Grande and San Juan drainages.

This information is based on a report of the Colorado A & M Experiment Station, the Weather Bureau and Soil Conservation Service and other federal, state and local agencies studying water supply outlook for 1953.

These reports include early season stream-flow forecasts based on precipitation, snow surveys, and other data available as of March 1, according to Homer J. Stockwell, irrigation engineer for the USDA and the A & M Experiment Station.

Stream flow during the snow melt season is expected to be less than that indicated by present snow cover because of extremely dry mountain soil moisture conditions under the snow. Soils in the irrigated areas are generally dry. An exception to this condition is the irrigated area of Eastern Wyoming and Western Nebraska and on the lower South Platte in Colorado. Stream flow is near average for this time of year. Irrigation reservoir storage is near average except for the Arkansas and lower Rio Grande Valleys.

The following is a statement of the water supply outlook by major watersheds in detail.

North Platte

The current snow cover on the North Platte watershed is 94 percent of normal and 68 percent of March 1, 1952. Precipitation at higher elevations was very deficient during the late summer and fall months. The inflow to Seminole Reservoir is expected to be about 75 percent of normal for the snow melt season. The water supply in irrigated areas below the four major reservoirs on the North Platte in Wyoming is assured for 1953. Storage in these reservoirs now totals over 1,600,000 acre-feet, about the same as last year and 60 percent

above the past ten year average. Soil moisture conditions in the upper irrigated areas in North Park in Colorado, Saratoga and Wheatland, Wyoming, are reported as fair. In Eastern Wyoming and Western Nebraska soil moisture conditions are fair to good.

South Platte

The water supply outlook on the South Platte watershed has slightly improved during February. Seasonal snow accumulation at higher elevations ranges from about 90 percent on the Cache la Poudre to 110 percent on Clear Creek and South Platte above Denver. Seasonal stream flow is expected to be less than indicated by snow measurements because of extremely dry soil under the snow, and less than normal precipitation at lower mountain and valley elevations. Soil moisture conditions in irrigated areas near the mountains are reported as fair to poor. Light snow during February has not been effective in improving soil moisture conditions. From Fort Morgan to Nebraska soil moisture conditions in irrigated areas are fair to good due to relatively heavy snow fall during December in that area.

Storage in irrigation and municipal reservoirs is improved. On the average, storage is close to that of March 1, 1952 and the past ten-year average on March 1. Winter stream flow has been about average.

Arkansas

The snow accumulation to March 1 on the Arkansas River drainage is about normal at higher elevations above Salida and near La Veta Pass. At lower elevations snow cover is less than normal partially due to winter melting. Precipitation during the late summer and fall months was below normal in the mountains which will tend to reduce the snow melt season runoff. Reservoir storage is almost nonexistent in the Arkansas Valley for irrigation purposes. The exception is Twin Lakes above Salida where there is now stored 25,000 acre-feet or about 50 percent of normal. Soil moisture conditions in irrigated areas are reported as fair above Salida but very poor below Pueblo.

Rio Grande

The increase in snow water content on the Rio Grande drainage during February was negligible even at high elevations. This lack of snow the past month has decreased the expected summer flow

of the Rio Grande and its tributaries. Snow cover is 60 to 70 percent of normal on Colorado tributaries and slightly higher in New Mexico. Stream flow for the 1953 snow melt season is expected to be about 70 percent of normal into San Luis Valley and 40 percent of normal into the Middle Rio Grande Valley in New Mexico. Inflow to Elephant Butte reservoir will be very low in respect to normal.

Irrigation water storage in San Luis Valley is over twice that of March 1, 1952, and near the past ten year average. El Vado reservoir on the Rio Chama is nearly empty. Storage in Elephant Butte and Caballo reservoirs is now 465,000 acre-feet. This is four times that stored a year ago but critically low in view of the current water supply outlook or prospective inflow during the snow melt season. Soil moisture conditions in valley irrigated areas along the Rio Grande are fair to poor.

Upper Colorado River

Snow cover on the Upper Colorado River is about normal to March 1 except in the San Juan mountains where some snow courses have 70 percent of normal snow water content. The snow melt season runoff of the Upper Colorado and tributaries in Colorado will be less than indicated by current snow accumulation because of extremely dry soil moisture conditions in mountain areas. Stream flow will range from 60 to 80 percent of normal. Soil moisture conditions are reported as fair to good in irrigated areas except in southwestern Colorado near Durango and Cortez. Stream flow is about average for the winter months on all tributaries.

Petran Heads

Minnesota Growers

Last month the Minnesota Vegetable Growers Association was formally organized and the following officers elected:

Paul Petran, Albert Lea—Pres.; Fred Gerten, St. Paul—First Pres.; Eugene Peterson, Baker—Second V. Pres.; Orrin C. Turnquist, St. Paul—Secy-Treas.

Directors: John Ravenhorst, Jr., Hollandale; Sig Edling, Minneapolis; Chris Rogalla, White Bear; Arthur Carlson, Duluth.

A constitution and by-laws were adopted.

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Know Your Marketing Terms

By C. R. KEATON, Associate Extension Economist, New Mexico A & M College

GROWERS who market vegetables and consumers who buy them should know the trade terms and definitions in vegetable marketing. By understanding the trade terms that are used to describe shipments by freight, producers, jobbers, retailers, wholesalers, processors, and consumers can understand what happens to farm and ranch produce from the farm to the buyers and to consumers.

Growers who know the trade terms have a definite advantage over those who do not. You may hear some terms that you think are unnecessary, but they are all essential in describing a shipment of produce. These terms are important in the movement of products from the farm to buyers.

Shipping terminology is another tool that farmers and ranchers can use to their financial advantage. By keeping up-to-date on market terminology, farmers can more easily and readily bargain for prices and the conditions of the sale.

Here are some of the trade terms and definitions used by growers, packers, shippers, and sellers of fruits and vegetables. The meaning of these terms will help growers in planning future marketing and can be used in bargaining for condition of sale.

"Suitable shipping condition"—This lettuce has been packed and iced and is in a condition which, if the shipment is handled under normal conditions, will assure delivery without abnormal deterioration.

"F.O.B."—The produce quoted or sold is to be placed **FREE ON BOARD** the car shipping point, unless otherwise specified, in suitable shipping condition.

"Suitable Shipping Condition"—the commodity at time of billing, is in condition which, if the shipment is handled under normal condition, will assure delivery without abnormal deterioration.

"F.O.B. Sale at Delivered Price"—Transportation charges are paid by the seller. The produce is delivered at a specified price.

"F.O.B. Acceptance"—The buyer assumes full responsibility for the goods at shipping point and has no right of recourse on arrival, if shipped under suitable shipping condition. **"F.O.B. Acceptance Final"** means that the buyer accepts the produce f.o.b. cars at shipping point without recourse.

"Delivered" or "Delivered Sale"—The seller will deliver the produce at specified place free of all charges and assuming all risks. The produce must meet grade requirements at point of delivery.

"In Transit," "Roller" or "Rolling Car"—The produce is in possession of the transportation company and is under movement from shipping point to market in which delivery is to be made.

"Tramp Car" or "Tramp Car Sale"—Produce moving from point of production to an undetermined market. After a market is located the car is billed to that destination.

"Rolling Acceptance"—The produce in moving from producer to market when the sale is made and the buyer assumes the responsibility for transportation and has no recourse against the seller because of any change in condition, if shipped under suitable shipping conditions.

"Track Sale" or "sale on track"—A sale of produce on track after arrival at destination and after the produce is inspected and meets certain standards.

"C.A.F."—Cost and Freight.

"C.A.C."—Cost and Charges.

"C.I.F."—Cost Insurance and Freight.

"Carload," "Carlot" or "Car"—Not less than the minimum quantity required by the carrier's tariff applicable to the movement and not more than 10 per cent in excess of minimum tariff requirements.

"Shipping Point Inspection"—The seller is required to obtain federal or federal-state inspection, or private inspection to show the compliance with the quality, con-

(Continued on Page 13)

Lettuce being trimmed and packed for shipment. This consignment is being shipped "F.O.B. acceptance."



MARKET REPORT—

POTATOES and ONIONS

(Prepared by CVG COMMODITY MARKET ANALYST)—April 1, 1953

THE FUTURE'S MARKET HAS BEEN CHARACTERIZED BY THE INDECISION of the trade. The result has been a wait-and-see attitude. The price recovery, based on the stock report by the Maine Potato Council, was short lived as were the other minor advances. The resulting long liquidation and trade selling forced the April contract to new seasonal lows during second week in March.

The continued heavy tone of the April contract gives indications of eventually resulting in further price declines. The reportedly large percentage of speculators in the April contract is attaching considerable attention in the market, particularly because heavy deliveries are expected during the first week of that month. Aiding materially in the formation of a rather pessimistic outlook for the near term is the slow movement out of Maine and the excellent progress being made by the Hastings, Florida crop.

THE PROSPECT OF A LARGE 1953 POTATO CROP, with a resulting low price level is stirring a modest interest in Congress to make some funds available for possible government purchases. The latest move, that by Senator Ellender (D. La.), allows for the use of section 32 funds for the purchase of potatoes for school lunch and diversion programs.

THE CANADIAN DEPARTMENT OF AGRICULTURE REPORTED STOCKS OF POTATOES on March 1st at 9,522,000 bushels. Comparisons of Canadian Potato Stocks (Bushels) are, March 1, 1953, 9,522,000; March 1, 1952, 7,636,000; February 1, 1953, 11,841,000; February 1, 1953, 9,395,000.

EARLY COMMERCIAL POTATOES: Acreage for early spring harvest in Florida and Texas is estimated at 26,400 acres. This is 27 percent larger than acreage harvested in 1952. Growers in Florida have one of the largest acreages of record, but in Texas a record-low acreage has been planted. Growers in the Hastings area are increasing acreage 23 percent. Other early spring areas of Florida, acreage is 81 percent larger than the 1952 harvest. Throughout Florida, condition of crop is good. Growing conditions of the Texas crop, planted in early January, has been favorable. Harvest of Texas crop not expected until early April.

CARLOT SHIPMENTS OF POTATOES (March 16th to March 19th). California 197, Colorado 265, Florida 515, Idaho 1437, Maine 1,856, Minnesota 584, Nebraska 118, North Dakota 425, Oregon 223, others 319. Total 5,939. Imports—Canada 43, others 2.

PROSPECT FOR SOUTH TEXAS EARLY SPRING ONIONS point to a production of 5,592,000 sacks (50 lb.). This is an increase of 44 percent over last year's crop of 3,880,000 sacks.

The most advanced crops are in the irrigated areas of the Lower Valley which extend from the extreme east to the extreme west of the Valley. While there are a few early fields in the Laredo and Winter Garden irrigated sections, volume production is not expected until mid-April. Early Pass onions not expected to be in production before early May. In non-irrigated sections, production from early plantings is expected around mid-April, but considerable acreage of late plantings not expected until early May marketing.

MARCH 1 INTENTIONS REPORTS indicate 62,390 acres of late summer onions in 1953. If this prospect is realized it will be 8 percent more than the 57,790 acres for 1952. By regions the prospective changes in acreage are as follows: Eastern, 4 percent more than 1952; Central, 4 percent more than 1952; Western, 15 percent more than 1952.

CARLOT SHIPMENTS OF ONIONS (March 16th to March 19th). Colorado 16, Idaho 15, Michigan 44, Minnesota 15, New York 41, Oregon 56, Texas 77, others 11. Total 275 Imports—Chile 61, Mexico 29.

POTATO RESEARCH ADVISORY COMMITTEE RECOMMENDS INCREASED RESEARCH SUPPORT: The Potato Research Advisory Committee has recommended unanimously that research and the dissemination of results of research in marketing, utilization, and production be considered the most important functions of the Department of Agriculture.

The committee, which met March 23-25, recommended also that Congress provide increased support for agricultural research, at least at the level of authorizations in the Research and Marketing Act of 1946.

In considering potato marketing problems, the committee gave top priority to: (1) Expanding work on the development and evaluation of improved structures, plant layout, work methods and equipment for handling, storing, packing, and shipping potatoes at the Red River Valley Research Center. This would include integrated studies on selected problems in this field in Maine and in other important producing areas in co-operation with State experiment stations and industry organizations. (2) Initiating work on the development and evaluation of small, rigid or other type packages or containers from new or presently used materials that will reduce damage to potatoes during handling and improve their salability.

In marketing service work the committee recommended top priority be given: (1) Expansion of work, under contract, in the training of wholesalers and retailers in the merchandising of vegetables and (2) expansion of marketing educational work of the Extension Service.

Equipment and materials

(Continued from Page 9)

The length of time the chemical is retained in the soil depends upon soil moisture, type, temperature and organic content. In general, however, 2 to 10 pounds per acre of actual treated surface gives good weed control for a period of from 3 to 8 weeks.

Heavy rains occurring immediately after applying the chemical to the soil do not appear to reduce the amount of weed control.

Preliminary tests indicate that Alanap has low toxicity to warm-blooded animals. No adverse effects have been observed in handling large quantities of the chemical both in the laboratory and afield. Extensive toxicological studies are now in progress.

Standard spray equipment delivering 25 to 100 gallons per acre can be used to apply Alanap as a broadcast spray. The spray tank should have some type of agitation, and it is advisable to clean the spray equipment after using with a dilute solution of ammonia water to avoid contamination of other sprays.

The chemical is being supplied currently as a wettable powder containing 90 per cent active ingredient. Further formulation work is in progress and greenhouse and field trials indicate that modifications of this basic powder may be advantageous.

The purpose of the pre-emergence treatment is to control weed growth, preferably on the row, until the crop is large enough to prevent weed interference or to permit machine cultivation. To insure maximum weed control, it is important that the soil be properly prepared with soil clods broken up before applications and the soil should not be disturbed after treatment until cultivation is absolutely necessary.

For further information, address
Naugatuck Chemical
Division of U. S. Rubber Co.
Bethany 15, Connecticut

A four-page folder (Form 668) just released, illustrates and describes the new HOWE 77 WEIGHTOGRAPH, which features a new projection type of weight indication. Twenty important features of this revolutionary automatic weighing accessory are listed along with descriptions and photographs of the unit.

The HOWE 77 WEIGHTOGRAPH can be simply attached to any beam scale, or to any scale convertible to beam operation, making an old-fashioned beam scale an "automatic" of the latest type. For further information, write for a copy of Form 668, The Howe Scale Company, Rutland, Vermont.

(Continued from Page 11)
dition, and grade specification of the contract. The sellers assumes the risk.

"Shipping Point Inspection Final"—The same as shipping point inspection except the buyer assumes the risk and has no recourse against the seller.

"Subject Approval Wired Government Inspection"—Seller wires buyer the inspection certificate as to quality condition, grade, and other information on the inspection record.

"Guaranteed Advance"—The person making the advance guarantees that the net proceeds to the consignor shall at least equal the amount advanced, and the consignor is not held liable.

"Accommodation Advance" or "Regular Advance"—The shipper receives an advance of money or credit and if the produce does not sell for the advance credit it is to be returned.

"Price Arrival"—The produce is inspected on arrival and price is agreed upon between the customer and shipper.

"F.O.B. Inspection and Acceptance Arrival"—Seller assumes all costs and risks to the customer. The produce is inspected and must meet specification.

COMING EVENTS

April 15, 16, 17—National Association of Produce Market Managers, Hotel Bond, Hartford, Conn.

May 17-21 — American Warehousemen's Association and National Association of Refrigerated Warehouses, Hotel Shoreham, Washington, D. C. Association headquarters: Tower Bldg., Washington 5, D. C.

June 11, 12 and 13—Idaho Shippers Association (including Malheur county, Oregon) annual summer meeting. Association Headquarters: P. O. Box 1100, Edd Moore, secretary-manager, Idaho Falls, Idaho.

Sept. 23, 24 and 25, 1953—The Florida Fruit and Vegetable Association, Casablanca hotel, Miami Beach. Association headquarters: 2401 East Colonial Drive, Orlando, Fla.

Oct. 4, 1953—Third Annual Natl. Convention, Produce Prepackaging Assn., Chase Hotel, St. Louis, Mo. Week-long Conv.

Secretaries of vegetable groups—local, state, regional, etc.—are urged to send CVG dates, details, programs, etc. of meetings, conventions, field days and coming events for this column and news columns.

The Experience of 1952-'53

Should Be a Lesson

What will happen in 1953-'54 depends on a good many variables, we know.

But we also know that growers, shippers, and chippers can all take a lot of the guesswork out of their operations through proper use of the futures markets for Maine Potatoes on the New York Mercantile Exchange.

How?

Well our new report called "About Potato Futures" explains some of the fundamental principles of this market . . . tells growers, shippers, and chippers how it can be used to advantage.

If you'd like a copy, just ask. We'll include a copy of our January report on the potato outlook too—a fact-packed survey of the current situation.

Just ask for "Potato Pamphlets" and address a card or letter, to—

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VGAA Delegation Meets With Ike



March 24th a delegation of vegetable growers from the major producing areas of the nation visited President Eisenhower at the White House.

Under the leadership of A. Lee Towson, Jr., President, Vegetable Growers Association of America, Seabrook, New Jersey; Walter F. Pretzer, Past President, Cleveland, Ohio; James L. Swan, 1st Vice President, Delavan, Wisconsin; and O. Keith Owen, Terre Haute, Indiana, President, National Hot House Vegetable Growers Association, they discussed with the President a number of disturbing vegetable production, transportation, and marketing problems.

Those shown in the picture, left to right, are: John Trask, South Carolina Grower, Beaufort, South Carolina; Dick Sams, Former President, VGAA, Clarkston, Georgia; Austin Anson, Ex. Secretary, Texas Fruit & Vegetable Association, Harlingen, Texas; O. Keith Owen, President, National Association Hot House Vegetable Growers, Terre Haute, Indiana; Orville Thoreson, President, Iowa VGA, Swea City, Iowa; Milton Mueller, President, Missouri VGA, Missouri; Paul Dickman, Vice-President, VGAA, Ruskin, Florida; Frank App, President, N. E. Vegetable and Potato Council, Bridgeton, N. J.; Paul Petran, Vice President, VGAA, Albert Lea, Minnesota; President Eisenhower; Walter F. Pretzer, Ex-President, VGAA, Cleveland, Ohio; Lee Towson, President, VGAA, Bridgeton, N. J.; James Swan, 1st Vice-President, VGAA, Delavan, Wisconsin; Lee Rand, Director, VGAA, Wilson, Connecticut; Walter Sass, Cook County, Farm & Garden Association, Des Plaines, Illinois; John C. Davis, Administrative Secretary to Secretary of Agriculture Benson (who represented the Secretary at the White House); Max Chambers, News & Information, VGAA, Preston, Md.

Led by Mr. Towson, the group was immediately put at ease by the President as he sat on the side of his desk and talked earthy farming with them.

The President was "wonderfully understanding" about vegetable growing and while he made no commitments, he expressed admira-

tion for all "who want to paddle their own canoe." It is expected that he will pass the recommendations handed to him by Mr. Towson on to Secretary of Agriculture Benson.

The five major points of the statement were:

According to U.S.D.A. figures, the American public consumed 1,577 pounds of food per person last year. About half of this food was produced under conditions of price support. The other half, of which vegetables were a major part, was produced and marketed without formal support.

We are earnestly requesting in the spirit of fair play that all acreage removed from crops under Price Support schemes by acreage allotments must be planted for soil building purposes only and not from subsidized competition to unsupported crops.

American agriculture has the "know-how" and best mechanized tools for production and distribution. Its markets consist of consumers who have the greatest purchasing power ever known. Yet, some growers, administrators, and legislators think that under all these optimum conditions it is necessary to subsidize agriculture.

We, in the vegetable industry, the second largest producers of food, tonnage-wise, have proved through many years that our greatest efficiency in production and marketing has been achieved without formal price supports. We therefore, invite other segments of our agriculture and economy to consider a gradual return to reliance upon efficiency and resourcefulness as a means of providing the greatest opportunity.

A relatively low tariff with no import quotas is causing considerable hardship by demoralizing normal markets with produce brought in from areas outside of the U.S.A., where the standard of living is relatively low. We request new hearings upon it.

The American Vegetable Growers.

operating under the principle of "self-help," a fundamental principle which has made us a great nation, request only equality of opportunity, with an American sense of fair play, and invite other segments of agriculture, industry, and labor to join in these purposes.

**Statement By The VGAA to the
President of the United States,
Tuesday, March 24, 1953**

Mr. President:

We are meeting here today in the capital of the greatest country in the world. A republic, which through the initiative and efficiency provided by freedom of choice and private enterprise, has made possible for its citizens the highest standard of living the world has ever known, as well as the most satisfactory cultural life.

According to U.S.D.A. figures, the American public consumed 1,571 pounds of food per person last year. About half of this food was produced under conditions of price support. The other half, of which vegetables were a major part, was produced and marketed without formal support.

We are earnestly requesting in the spirit of fair play that all acreage removed from crops under Price Support schemes by acreage allotments must be planted for soil building purposes only and not from subsidized competition to unsupported crops.

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The American Vegetable Growers, operating under the principle of "self-help," a fundamental principle which has made us a great nation, request only equality of opportunity, with an American sense of fair play, and invite other segments of agriculture, industry, and labor to join in these purposes.

A. LEE TOWSON, JR., President
Seabrook, N. J.

THE COMMERCIAL VEGETABLE GROWER

America's Vast Quantity Of Food

One out of every three people are engaged in the same work as 16 years ago, the survey shows.

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Soil Fumigation

There was a significant increase in fumigation on 10 years of fumigation. The fumigations had a value of \$1.50 per acre. The control of root rot was 1 year after fumigation. There have been no fumigations in this program. The fumigation of the soil is a development of the fumigation equipment. The use of row

APRIL, 19

Americans Consume Vast Quantities Of Food Each Year

One out of every six Americans are engaged in producing food. In 1916 one out of three were doing the same job. And as much as 75 percent of the U.S. labor force was engaged in agricultural pursuits a century ago compared with 16 percent today, USDA statistics show.

America has during recent years become increasingly dependent upon fewer farmers for its food. Due to many technical advances, America's farms, likewise, are now hopelessly dependent on steel, chemicals, oil, rubber, and power.

U.S. farms in 1952 used 7 million tons of finished steel, more than is used in a year's output of automobiles; 50 million tons of chemical materials, 5 times the amount used in 1935; 16½ billion gallons of crude petroleum—more oil for power than is used by any other industry; 320 million pounds of raw rubber—enough to put tires on 6 million automobiles; and 15 billion kilowatt hours of electrical power—enough to supply Chicago, Detroit, Baltimore, and Houston for a year.

Also, U.S. population increased last year by 7,392 per day—requiring 112 more tons of food every Monday morning than it did the week before; enough to fill an 83-car freight train every year. And food consumption per person is estimated at more than 3 quarters of a ton annually; the average adult eats his weight in food every six to eight weeks.

Once a nation of full garbage cans, the U.S. can no longer afford this luxury. Gambling against weather, price and taxes the farmer is in a perpetual quandary. Still, in order to produce to capacity, farmers must make large annual cash expenditures.

Intensified research is going on for agricultural crops which will meet the increasing demand for more and better food. With a limited number of uncultivated acres remaining, the U.S. is rapidly approaching a crisis in agriculture.

Soil Fumigation, A Live Subject

There will be many crops planted on fumigated soil this spring. For 10 years experiments and demonstrations have tended to show the value of soil fumigation in the control of root knot nematode, and year after year additional converts have been made. Cornerstones in this progress have been the development of effective chemicals, development of simple and effective equipment for application, and the use of row-method application with

materials at a reduced cost. Among principal users of fumigation will be commercial vegetable growers.

White-Fringed Beetle Inspection Needed In Non-Infested States

Keeping the destructive white-fringed beetle out of areas of the United States not now infested with this insect pest, can best be accomplished by a coordinated Federal and State survey and inspection program, according to a U. S. Department of Agriculture entomologist.

The white-fringed beetle is now restricted to the eight southeastern states—Alabama, Florida, Louisiana, Mississippi, Tennessee, Georgia, and North and South Carolina—principally through the combined efforts of Federal and State quarantine and control projects. However, the potential range of the beetle in the United States extends as far north as Pennsylvania, and from Coast to Coast.

Believed to have been brought into this country from South America, the beetle travels with shipments of nursery stock and with cargoes of agricultural and industrial products along highways and railroads. It feeds on some 240 different species of plants, including many major field and garden crops. Plants severely attacked by the beetle larvae turn yellow, wilt, and die.

U. S. Department of Agriculture entomologists in detailing the need for greater effort against this pest suggested that (1) pest inspectors in States free of the beetle be sent to infested areas to learn the special methods used by the USDA for white-fringed beetle inspection; or (2) that USDA employees be assigned to beetle-free States to discuss techniques and give field demonstrations. The pest inspectors, who continually visit all sections of their State, could then watch for the white-fringed beetle as well as for other insects.

The white-fringed beetle is most easily detected in the adult stage. Its peculiar feeding design left on the leaves of plants is used as a guide for inspections. The beetle has a habit of falling to the ground and "playing dead" if someone approaches the plant where it is feeding. Where the feeding designs are discovered, the beetle can usually be found on the ground under or near the plant.

State pest control officials of a number of beetle-free States have already added a "look-out" survey for the beetle to their regular activities. Several States in areas already infested have arranged to have their personnel trained in white-fringed beetle inspection techniques.

Buy Plant Food—Not A Pig In A Poke

The plant food in the bag is what counts. The grade or analysis of fertilizer will tell you how much nitrogen, phosphoric acid and potash is in each bag. A 100 lb. bag of 2-12-12 has (2 + 12 + 12 = 26) 26 lbs. of these plant foods and a 100 lb. bag of 4-16-8 has (4 + 16 + 8 = 28) 28 lbs. There are also other minerals such as calcium, magnesium, and sulphur which are needed in plant growth. The first number represents the percent nitrogen (N); the second, the percent available phosphoric acid (P_2O_5) and the third, the percent water soluble potash (K_2O). This 100 lbs. of 4-16-8 would have 4 percent nitrogen, 16 percent phosphoric acid and 8 percent potash. This means 100 lbs. of 4-16-8 fertilizer has 4 lbs. of nitrogen, 16 lbs. of phosphoric acid, and 8 lbs. of potash or a total of 28 lbs. of available plant food. Remember this—the figure representing percentage is the pounds of plant food in 100 lbs. of fertilizer. For example, a 20 percent phosphate has 20 lbs. of phosphoric acid, 47 percent has 47 lbs.; a 16 percent nitrogen fertilizer has 16 lbs. of nitrogen in each 100 lbs. and a 33 percent nitrogen fertilizer has 33 lbs. to each 100 lbs. Then, for mixed goods, add up the figures in the grade and that will be the pounds of plant food in each 100 lbs. For example, a 10-10-10 would have 30 lbs. (10 + 10 + 10 = 30).

45th VGAA Convention

November 30-December 4 have been set as the new dates for the 45th annual convention of the Vegetable Growers Association of America at the Chase Hotel, St. Louis, Missouri, A. Lee Towson, Jr., Seabrook, N. J., VGAA President, announced this week.

"Acting upon the recommendation of the St. Louis Vegetable Growers Association, who are hosts to the convention, the VGAA officials gladly made the change which conforms to the original preference for the first week of December. VGAA is happy to take advantage of an opportunity to better service its members," said Mr. Towson.

The change in the dates makes it possible to give VGAA members a more outstanding convention than originally planned, according to William Schmittle, Robertson, Missouri, Convention General Chairman. Paul M. Bernard, County Extension Agent, St. Louis County, will be a key figure in convention arrangements.

The tentative program is expected to be released in the near future.

NEW WEED KILLER ALANAP-I*

Drastically cuts cost of hand weeding of vine crops

THE United States Rubber Company's Naugatuck Chemical Division has now developed a remarkably effective pre-emergence herbicide which kills weeds as they start to sprout or before they emerge from the ground. Named Alanap-I, it effectively controls such weeds as pigweed, purslane, lambsquarter, quickweed, ragweed, foxtail and crabgrass.

Presently available to growers, Alanap-I considerably reduces the cost of tedious hand weeding and crop cultivation. One grower reports complete elimination of hand weeding in squash, cucumber, pumpkin, cantaloupe and watermelon, and a saving of more than \$100.00 per acre.

Advantages

Under normal soil conditions, Alanap-I maintains excellent weed control for a period of 3 to 8 weeks, even after heavy rains. Alanap-I is non-hazardous to handlers, warm-blooded animals and vine crops. It is easy to apply and reasonably priced.

When To Use

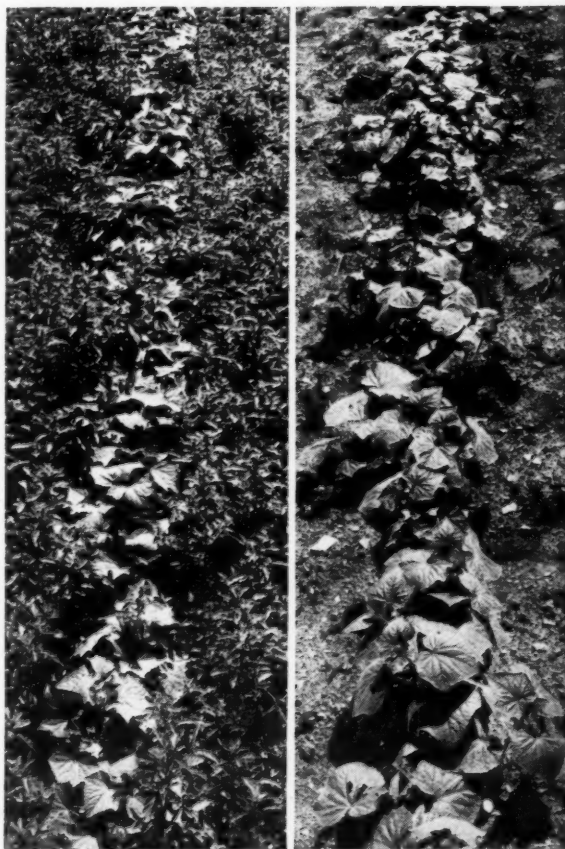
Alanap-I can be used for a pre-emergence weed control by spraying soil surface up to 48 hours after planting. A post-emergence spray may be used after vine crop has emerged but before weeds have emerged. To insure maximum weed control, soil clods should be eliminated.

Now Available

At the present time, Alanap-I is specifically recommended for use in New England, New York, Pennsylvania, Delaware, New Jersey, Ohio, Indiana, Michigan, Illinois, Minnesota, Wisconsin, Iowa and Missouri. Other states will have the unique benefits of Alanap-I after more extensive field tests have been completed.

"ALANAP" Promising on Other Crops

Further testing on cotton, soybeans, peanuts, lima beans and asparagus may allow wider uses in 1954.



ALANAP-I Made This Big Difference

On the left, weeds have nearly choked out this untreated row of young cucumber plants at Associated Seed Growers weed control test plots. Row in right photo was treated at 4 lb. Alanap-I per acre immediately after planting cucumber seed.

*U. S. Pat. No. 2,556,665



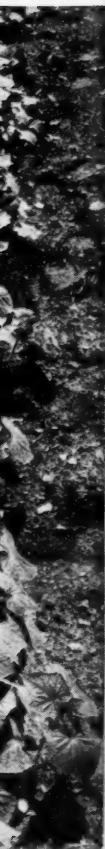
Advise local supplier of your needs beforehand to insure availability. For further information about Alanap-I, write to:

UNITED STATES RUBBER COMPANY

Naugatuck Chemical Division, Naugatuck, Connecticut

manufacturers of seed protectants—Spergon, Spergon-DDT, Spergon-SL, Spergon-DDT-SL, Phygon Seed Protectant, Phygon Naugets, Phygon-XL-DDT, Thiram Naugets, Thiram 50 Dust—fungicides—Spergon Wettable, Phygon-XL—insecticides—Synklor-48-E, Synklor-50-W—fungicide-insecticides—Spergon Gladiolus Dust, Phygon Rose Dust—miticides—Aramite—growth retardants and herbicides—MH-30, MH-40—pre-emergence weed killers—Alanap-I.

P.*I



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test plots. Row
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No. 2,556,665

anap-I, write to:

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